

Letter from Alexander Graham Bell to Mabel Hubbard Bell, June 2, 1880, with transcript

Alexander Graham Bell to Mabel (Hubbard) Bell. L 904 - 14th St., Washington, D. C., Wednesday, June 2d, 1880. My sweet little wife:

A great eventful day this is for me and my only regret is that you are not here to enjoy my triumph with me. Mr. Tainter and I have been mortified that cloud and rain have prevented us from making experiments with our huge diaphragm-mirror photophonic transmitter. You know what I mean? That huge wooden affair with the glass-plate diaphragm you may remember seeing on the table with a rim of zinc on it during the process of silvering.

We had to content ourselves with discussing the operation of it as the sun refused to come out for our benefit. We came to the conclusion that it was too large and that a smaller and thinner and more elastic diaphragm would do better. Mr. Tainter has therefore occupied his time in constructing a diaphragm of mica about the size of an ordinary telephone diaphragm and in depositing solid silver on the mica. The arrangement was completed to-day but the sun was behind a cloud and refused to shine. We therefore tried it with a kerosene lamp and obtained some feeble sounds as the result. Late this evening the sky cleared off and the setting sun shone brightly against the back windows of the Laboratory. We therefore attempted to photophone with the last expiring rays rather than wait till tomorrow.

A mirror A was put out of the window on the stairs so as to catch some light which was reflected from it along the passage way through the open door of the work-room on to the 2 photophonic transmitter B on the bench near the window. The light was then reflected from the diaphragm-mirror B in to the parabolic reflector C in the focus of which was placed the selenium cell D.

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Mr. Tainter spoke and shouted to the Photophone B and I listened to telephones down in the kitchen which were connected with the selenium cell. I could hear Mr. Tainter's voice but very faintly. We then used the lens E by means of which the light was brought to a focus on the diaphragm-mirror B — before being sent into the parabolic reflector. I went downstairs to listen while Mr. Tainter spoke to the Photophone. As I put the Telephones to my ear — I heard the words “Mr. Bell do you hear what I say” just as if they had been uttered into my ear by Mr. Tainter himself. The articulation was perfectly distinct — but what was most surprising was the loudness of the sounds. They were fully as loud as the sounds produced by the Blake Transmitter if not louder. I understood everything Mr. Tainter said and he understood everything I said when we changed places.

The silvered mica diaphragm has solved the difficulty of a suitable Transmitting Photophone — and the parabolic reflector has solved the difficulty of a suitable Receiving Photophone and we are naturally impatient to try the instruments at a great distance. This we hope to do tomorrow if fine. The great discovery is the extraordinary loudness of the reproduced voice. I should not be surprised if selenium could be used advantageously in place of the Blake Transmitter. My darling May — it is too 3 bad you are not here. I am bursting to tell you everything I am thinking about.

I have somewhere in the other room a piece of paper filled with headings of subjects to write to you about — specially things mentioned by Richard but I cannot find it just now and Photophony has driven everything else out of my head. Are you and Lina tired of Atlantic City yet. Don't either of you get run over! Do you keep your promise about the beach. How is Elsie? — and my little Marion? How is the little boy who broke his le-imb! Glad you received my telegram. Thanks for your prompt reply. Letter received this morning. The papers are copying right and left articles about “seeing by telegraph”! With much love.

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Your own, Alec.